AMENDMENTS TO THE CLAIMS

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double brackets indicating deletions.

Listing of the Claims

1. (CURRENTLY AMENDED) An interventional procedure simulation system, comprising:

a control unit and an interface unit, said control unit being configured to communicate~~communicating~~ with said interface unit to simulate handling of at least one instrument interfaced by said interface unit,

wherein the control unit ~~comprises~~ includes a database of vessels having a hierarchy structure, each vessel having a diameter and a stiffness, ~~and~~

said instrument being a tool expandable in a simulated vessel, whereby ~~when~~ if said tool is expanded, a simulated geometry of said vessel changes resulting in a simulated fluid flow change, and

the system being configured to model the simulated flow change as an electrical resistive network in which potentials correspond to pressure, currents correspond to flow and electrical resistance corresponds to flow resistance.

2. (CURRENTLY AMENDED) The system of claim 1, ~~wherein said~~further comprising a plurality of simulated vessels ~~are~~ interconnected in a simulated hierarchical structure, wherein ~~and~~ said simulated fluid flow change ~~effects~~affects fluid flow changes in adjacent simulated vessels.

3. (CURRENTLY AMENDED) The system of claim 1, wherein said instrument is a balloon, stent ~~and/~~or a distal protection tool.

4. (CURRENTLY AMENDED) The system of claim 1, wherein ~~a~~ each of the plurality of vessels is realized by a tubular geometry and a specific stiffness.

5. (CURRENTLY AMENDED) The system of claim 1, wherein the plurality of vessels are realized by lesions having different stiffness than ~~the~~ neighboring vessel parts.

6. (CURRENTLY AMENDED) The system of claim 1, wherein the system calculates a flow through the hierarchal structure realized as a vessel-tree as a result of ~~its~~ a geometry of the vessel-tree.

7. (CURRENTLY AMENDED) A method of simulating flow of a body fluid in an interventional procedure simulation system~~, comprising~~ having a control unit and an interface unit, said control unit being configured to ~~communicating~~communicate with said interface unit to simulate handling of

at least one instrument interfaced by said interface unit, the method comprising the steps of:

- providing a database of vessels having a hierarchy structure in said control unit, wherein each vessel has a diameter and a stiffness;~~,~~
- providing said instrument as a tool expandable in a simulated vessel;~~,~~ and
- changing a simulated geometry of said simulated vessel resulting in a simulated fluid flow change ~~when~~ if said tool is expanded.

8. (PREVIOUSLY PRESENTED) The method of claim 7, wherein the flow simulation is modeled as an electrical resistive network.

9. (PREVIOUSLY PRESENTED) The method of claim 8, wherein potentials correspond to pressure, currents correspond to flow and electrical resistance corresponds to fluid resistance.

10. (PREVIOUSLY PRESENTED) The method of claim 9, wherein a top of the fluid network is realized in a left ventricle of a heart, and a bottom of the network is in veins connecting to a right atrium of the heart.

11. (CURRENTLY AMENDED) The method of claim 8, wherein flow calculation calculates recursively through a tree until flow and pressure in all branches of the tree are solved.

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END OF CLAIM LISTING